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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,186	01/22/2002	Geoffrey Mattson	125-001	4459

34845   7590   11/27/2007
McGUINNESS & MANARAS LLP
125 NAGOG PARK
ACTON, MA 01720

EXAMINER
BATES, KEVIN T

ART UNIT	PAPER NUMBER
2153	

MAIL DATE	DELIVERY MODE
11/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/054,186	MATTSON, GEOFFREY
	Examiner	Art Unit
	Kevin Bates	2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 November 2007</u>.

2a)☒ This action is **FINAL**.　　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-26</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-26</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some *　c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Response to Amendment

This Office Action is in response to a communication made on November 8,

2007.

Claims 1 and 14 have been amended.

Claims 1 – 26 are currently pending in the application.

Remarks

The 35 USC § 102 rejection involving Ginjpalli has been removed in attempt to

focus the issue on the 103 rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lee (6904018) in view of Ginjpalli (7120151).

Regarding claims 1 and 14, Lee teaches a method of providing backup

resources for a primary label switched path (LSP) in a label switching network (Column

2, lines 64 – 67), the primary LSP having at least a portion for transmitting data packets

containing a label from a first label switching node to a second label switching node

(Column 1, lines 21 – 25), said portion including at least one intermediate label

switching node between the first and second nodes (Figure 3, elements LSR2-15), the

method comprising the steps of:

defining at least one backup LSP starting from the first node and merged with the

primary LSP at the second node (Column 3, lines 43 – 46), <u>the at least one backup LSP</u>

<u>for re-routing data packets around the at least one intermediate label switching node in</u>

<u>the event of a failure of the intermediate label switching node</u> (Figure 5, where the

loopbacked traffic bypasses LSR 3, 4 and 6);

determining a transformation of the label of a packet transmitted along said

portion of the primary LSP from an output of the first node to an input of the second

node the transformation including label stack manipulations performed by the at least

one intermediate label switching node (Column 1, lines 27 – 31);

configuring the first node to switch a packet to the backup LSP upon detection of

a failure in said portion of the primary LSP (Column 4, lines 50 – 61); and

configuring at least one node of the backup LSP to process the label of any

packet transmitted along the backup LSP (Figure 4, "looked back traffic flow after

failure) so as to apply the same transformation as said transformation of the label of a

packet transmitted along said portion of the primary LSP from an output of the first node

to an input of the second node (Column 1, lines 27 – 31).

Lee does not explicitly indicate that the packet has a label stack on which to push

and pull labels from, just swaping the values of labels and that the transformation to the

label stack is applied so that the label stack received from the backup LSP at an input to

the second label switching node corresponds to the label stack received from the

portion of the primary LSP at the input of the second label switching node.

Ginjpalli teaches a label switching network that uses a label stack (Column 2,

lines 62 – 65) and provides a backup LSP which includes a transformation to the label

stack so that the label stack received from the backup LSP at an input to the second

label switching node corresponds to the label stack received from the portion of the

primary LSP at the input of the second label switching node (Column 5, lines 30 – 31)

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to use Ginjpalli's teaching of label stacks and label stack

transformations in Lee's system in order to quickly recover from node failure with little

delay and only slight label stack modification.

Regarding claims 2 and 15, Lee teaches a method as claimed in claims 1 and

14 respectively, wherein the node of the backup LSP configured to apply the

transformation is the first node, said transformation being applied prior to pushing a

label of the backup LSP (Column 2, lines 13 – 18; see also Ginjapalli, Column 5, lines

25 – 27) and including at least one of a label swapping and a label popping

manipulation (Column 1, lines 27 – 31).

Regarding claims 3 and 16, Lee teaches a method as claimed in claims 1 and

14 respectively, wherein the node of the backup LSP configured to apply the

transformation is the second node (Figure 3, LSR8, wherein LSR8 is show to allow the

transformation of the label stack to send the packets along a backup LSP; see also

Ginjapalli, Column 5, lines 25 - 27).

Regarding claims 4 and 17, Lee teaches a method as claimed in claims 1 and

14 respectively wherein the step of determining the transformation of the label stack

comprises transmitting messages of a signaling protocol between the nodes of said

portion of the primary LSP (Column 4, lines 42 – 56), including indications of label stack

manipulations performed by said nodes on packets transmitted along the primary LSP,

said indications being processed at one of the first and second nodes for deriving said

transformation (Column 4, lines 47 – 49).

Regarding claims 5 and 18, Lee teaches a method as claimed in claims 1 and

14 respectively, wherein the step of determining the transformation of the label stack

comprises transmitting at least one sample packet from the first node to the second

node along said portion of the primary LSP (Column 4, lines 42 – 56).

Regarding claims 6 and 19, Lee teaches a method as claimed in claims 1 and

14 respectively, wherein the first node is configured to switch a packet intended for the

primary LSP to the backup LSP upon detection of a failure in said portion of the primary

LSP up to the intermediate node situated next to the first node (Column 4, lines 50 –

61).

Regarding claims 7 and 20, Lee teaches a method as claimed in claims 1 and

14 respectively, further comprising the steps of: defining at least one switchback LSP

from an intermediate node of the primary LSP to the first node (Column 4, lines 16 –

22); and configuring said intermediate node to switch a packet to the switchback LSP

upon detection of a failure in said portion of the primary LSP downstream of said

intermediate node and up to the node situated next to said intermediate node (Column 4, lines 16 – 22).

Regarding claim 8 and 21, Lee teaches a method as claimed in claims 7 and 20, respectively, further comprising the step of configuring the first node to switch to the backup LSP any packet received on the switchback LSP (Figure 3, the looped back traffic flow starting at node LSR 6 and travels to first node LSR 9 and 1, and travels along the backup LSP).

Regarding claims 9 and 22, Lee teaches a method as claimed in claims 8 and 20, further comprising the steps of: determining a second transformation of the label stack as the inverse of a transformation of the label stack of a packet transmitted along said portion of the primary LSP from the output of the first node to said intermediate node; and configuring at least one node of the switchback LSP to process the label stack of any packet transmitted from said intermediate node along the switchback LSP so as to apply said second transformation (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 10 and 23, Lee teaches a method as claimed in claims 9 and 22, wherein the node of the switchback LSP configured to apply the second transformation is said intermediate node, the second transformation being applied prior to pushing a label of the switchback LSP (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 11 and 24, Lee teaches a method as claimed in claims 10 and 23, wherein the primary LSP has at least one additional intermediate node between

the first node and said intermediate node, wherein the switchback LSP is defined to comprise the nodes of the primary LSP, in a reverse direction, from said intermediate node to the first node (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 12 and 25, Lee teaches a method as claimed in claims 11 and 24, further comprising the step of configuring said additional intermediate node to switch a packet to the switchback LSP upon detection of a failure in said portion of the primary LSP downstream of said additional intermediate node and up to the node situated next to said additional intermediate node (Column 4, lines 42 – 56).

Regarding claims 13 and 26, Lee discloses a method as claimed in claims 12 and 25, further comprising the steps of: determining a third transformation of the label stack as the inverse of a transformation of the label stack of a packet transmitted along said portion of the primary LSP from the output of the first node to said additional intermediate node; and configuring said additional intermediate node to process the label stack of any packet that it switches to the switchback LSP so as to apply said inverse transformation prior to pushing a label of the switchback LSP (Figure 3, for the immediate nodes each having to change the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Response to Arguments

Applicant's arguments filed November 8, 2007 have been fully considered but they are not persuasive.

The applicant argues that the combination of Lee and Ginjpalli does not disclose configuring the backup LSP to process the label stacks of packets along the backup LSP to apply the same transformation to the label stack on the backup LSP as applied to the primary LSP. The applicant also argues that the combination does not teach where the transformation allows the label stack to be returned to the same state after traversing the backup LSP as if the packet traveled the primary LSP.

The examiner disagrees, Ginjpalli, which provides the teaching for the label stack transformations, teaches the method for forwarding a packet along the backup LSP includes having the label stack transformed to tell the network to forward the packet along the backup path. In Column 5, lines 4 – 11, Ginjpalli teaches that the GID table rewrites tunnel labels for packets so that they traverse the backup LSP. This rewriting of the packet labels is equivalent to the claimed limitation of transforming the label stack. Ginjpalli then goes on to teach that the label re-writing is preformed in such as way that once the back-up path has been traversed that the label stack is returned to such a way that it operates like it had not traversed that back up node, this is shown in Column 5, lines 20 – 27. It is clear from using the teaching of Ginjpalli, that when you improve Lee to use the label stack method instead of label swapping, one would use Ginjpalli's teaching of re-writing the label stack in order to allow the back-up node to be traversed while not effecting the label stack once it gets past the back-up path.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (571) 272-3980. The examiner can normally be reached on 9 am - 5 pm.
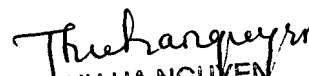
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin Bates
November 15, 2007

THU HA NGUYEN
PRIMARY EXAMINER